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Land Use Compatibility Study (Noise) Proposed Industrial Business Park Grand Valley, Ontario

Prepared for:

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November 23, 2021

HGC Project No. 02100441







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1 Executive Summary

HGC Engineering was retained by Thomasfield Homes to investigate issues of compatibility of a proposed industrial development located north of Country Road 109 and on the west side of Amaranth East Luther Townline in the Town of Grand Valley, Ontario. Road traffic is the primary noise source presently evident at the subject site.

This study follows the Ministry of the Environment, Conservation and Parks (MECP) guidelines with regard to land use compatibility, recommended separation distances and noise assessment. HGC Engineering personnel visited the site in October 2021 in order to investigate the acoustical environment, the site topography, and the surrounding land uses.

The results of the investigation indicate that the proposed development is feasible from a noise perspective with constraints imposed on the employment lands. Noise barriers and source noise controls may be required as a result of future noise studies prepared in support of municipal approvals or Environmental Compliance Approval (ECA) applications made by individual industries under the Environmental Protection Act (EPA) or commercial or light industrial facilities through municipal approval application processes. Individual noise studies for municipal approval applications must be conducted when siting information and permitted uses for the industrial sites or commercial sites are known to verify the need for noise mitigation to achieve compliance with MECP guidelines.





2 Description of the Site and Significant Noise Sources

The proposed site is currently zoned for Development. The site is located north of Country Road 109 and on the west side of Amaranth East Luther Townline in the Town of Grand Valley, Ontario. An aerial photo is provided as Figure 1. The Draft Plan of Subdivision prepared by Astrid J. Clos Planning Consultant dated July 23, 2021 is provided as Figure 2. The official plan indicates the lands to be employment lands. Schedule A2 of the official plan is included in Figure 3.

To the west of the site, approximately 320 m between property boundaries, are future residential uses. To the north and south of site are future employment lands and to the east are agriculture lands with residences. Immediate to the east of the site is a 2-storey residence with industrial operations at the rear side of the property. A site visit was conducted in October 2021. Road traffic is observed to be the primary source of sound in the area.

3 The Policy and Regulatory Context

There are several regulations, policies and agreements which should be considered in addressing issues of compatibility and noise impact in the context of this residential development plan.

3.1 The Environmental Protection Act and the Planning Act

The overriding legislation which applies to industrial uses is the EPA. Under this legislation, sound is considered as a contaminant, and is thereby subject to the provision that "no person shall discharge a contaminant... into the natural environment that causes or is likely to cause an adverse effect". Unless specifically exempt, industries are required to apply for Environmental Compliance Approvals for their operations under this act. The Ontario MECP has published certain criteria and guidelines for sound used by industry to obtain approvals under the EPA.

Similarly, the MECP has produced guidelines to assist municipalities and developers in preparing applications under the Planning Act which these authorities implement by providing comments when they are circulated. These are discussed below.







3.2 MECP Guidelines for Land Use Compatibility and Distance Separation

MECP Guidelines D-1, "Land Use Compatibility" and D-6 "Compatibility Between Industrial Facilities and Sensitive Land Uses" were prepared to minimize adverse effects caused by sources regulated by the EPA on existing land uses or in relation to land use approvals under the Planning Act. They recommend that studies be conducted to investigate the feasibility of providing sufficient mitigation when noise sensitive land uses are proposed within the potential zone of influence of an existing industry/commercial facility. The mitigation can be provided at the source, or can be incorporated on the development lands where the industrial/commercial facility is operating in compliance with legislated Ministry requirements.

In planning an industrial/commercial area near a sensitive land use, guideline D-6 suggests certain potential zones of influence for the industry, depending on the characterization of that industry. Three classes of industry are defined, as follows, as per the current D-6 guideline:

Class I Industrial Facility

A place of business for a small scale, self-contained plant or building which produces/stores a product which is contained in a package and has a low probability of fugitive emissions. Outputs are infrequent, and could be point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration. There are daytime operations only, with infrequent movement of products and/or heavy trucks and no outside storage.

Class II Industrial Facility

A place of business for medium scale processing and manufacturing with outdoor storage of wastes or materials (i.e. it has an open process) and/or there are periodic outputs of minor annoyance. There are occasional outputs of either point source or fugitive emissions for any of the following: noise, odour, dust and/or vibration, and low probability of fugitive emissions. Shift operations are permitted and there is frequent movement of products and/or heavy trucks during daytime hours.







Class III Industrial Facility

A place of business for large scale manufacturing or processing, characterized by: large physical size, outside storage of raw and finished products, large production volumes and continuous movement of products and employees during daily shift operation. It has frequent outputs of major annoyance and there is high probability of fugitive emissions.

For screening purposes, guideline D-6 outlines some potential influence areas for the different classes of industry, as follows. Outside these potential influence areas, it is unlikely that an industry which has been appropriately classified will have significant impact.

Class I – 70 metres Class II – 300 metres Class III – 1000 metres

Guideline D-6 acknowledges that the actual influence areas may be less, subject to site specific studies performed in accordance with guideline NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning". Notwithstanding the actual influence area of an industry, in order to minimize the potential for future land use conflicts, the MECP recommends that certain minimum separation distances be respected, as follows:

Class I – 20 metres Class II – 70 metres Class III – 300 metres

The minimum separation distances generally apply between the property lines of the industrial and sensitive uses, but portions of the industrial land can be considered as some or all of the setback if the specific use of that portion of the industrial land is controlled in a site-specific zoning bylaw.

The potential zone of influence may be greater than these minimum separation distances; however, as the purpose of this study is to investigate practical options, it is assumed that any industrial noise impact can be mitigated through the implementation of reasonable site specific control measures given the existence of these minimum buffer zones (parks, buffer areas, on-site mitigation in the form of noise berms/barriers, use of parking lots, roadways or locating noisy areas such as loading areas to the shielded side of buildings). The guidelines allow for some reductions in the minimum







setback distances, based on the results of supporting technical studies for infill developments or "lands in transition".

3.3 MECP Guidelines for Stationary and Transportation Sources

MECP Publication NPC-300, entitled "Environmental Noise Guideline, Stationary and Transportation sources – Approval and Planning" establishes sound level limits for stationary sources of sound. Stationary sources of sound can be individual facilities or pieces of equipment or the cumulative sound of activity or conveyances operating on industrial property such as trucking yards or loading areas. NPC-300 is used by industry to determine the impact of their operations at neighbouring noise sensitive receptors to demonstrate compliance for the purpose of obtaining approvals. It is also used by the development industry to determine if there may be significant noise impacts on lands considered for the development of noise sensitive uses. Given the presence of the roadways in the area, the lands would be considered to be in Class 2 area for any noise assessments.

NPC-300 recommends sound level limits as a function of the background sound levels due to road traffic and other industry. The objective of the guidelines is to establish a sound level limit at each noise sensitive receptor on the basis of "predictable worst case" impact. In general, the sound level limit must represent the minimum background sound level that occurs during an hour of the day in which the stationary source may operate, subject to exclusionary minima of 45 to 50 dBA, depending upon time of day (daytime, evening or night time) and proximity to the roadways. In this case, the minimum daytime criterion of 50 dBA and 45 dBA at night at the dwelling; along with a 50 dBA during the day and 45 dBA during the evening in the outdoor living area (OLA) would likely apply to the future residential dwellings.

3.4 Municipal Noise By-Law

Town of Grand Valley By-Law No. 2002-12 has specific prohibitions for noise generated by noise sources such as vehicles and construction equipment. It also has prohibitions by time and place. Generally, there are no prohibitions for industrial noise sources which are in conformance with the applicable zoning. Municipal Bylaw Enforcement staff is responsible for investigating complaints concerning commercial/industrial occupancies such as are proposed.







3.5 Summary

As an overview of the above regulations, policies and agreements, the industrial/commercial developer or developers and the future proposed industries and/or commercial uses are obliged to provide a suitable distance setback and any additional mitigation for any noise impact on the existing (or proposed) noise sensitive land uses in accordance with the Municipal Noise Control Bylaw and the requirements of the EPA through the Certificate of Approval process as per MECP D1, D6 and NPC-300 Guidelines and related documents. The approximate distances to existing and future residential uses are provided in Figure 4. It is noted that the proposed development meets the distance setbacks and zone of influence for Class I and II industries from the future residential lands to the west.

4 Proposed Employment Area

We have reviewed Section 4.1.3.1 of the Town of Grand Valley Official Plan, the subject lands are designated for Employment. Lands in the Employment designation may be used for the following:

a) manufacturing, processing, repair, servicing and recycling; b) warehousing and enclosed storage of goods and raw materials; c) transportation terminals and truck terminals; d) vehicle, machinery and equipment sales, service and leasing operations, fuel retailing operations, automotive commercial uses, such as service stations, mechanical and body repair, recreational vehicle or trailer sales and service, car rental outlet; e) offices complex, larger-scaled office building; f) warehousing and retail outlets, including building materials outlets, gardening and nursery centres; g) hotels and motels; h) large scale institutional, commercial and recreational uses and i) outside storage associated with a permitted use.

The lands are proposed to be zoned Employment (M1) zone. Under the Town of Grand Valley Zoning By-Law, the permitted uses are:

i) agricultural implement sales outlet; ii) agricultural produce storage area or facility; iii) building supply and lumber establishment; iv) bulk fuel depot; v) business, professional or administrative office; vi) computer, electronic or data processing; vii) contractors or tradesman establishment; viii)







entertainment establishment; ix) equipment sales and rental establishment; x) feed mill; xi) financial institution; xii) letter carrier depot; xiii) manufacturing, processing, packaging, fabricating and assembly plant; xiv) motor vehicle repair garage; xv) motor vehicle parts establishment; xvi) motor vehicle body shop; xvii) outdoor storage, accessory; xviii) parking garage, structure or lot; xix) printing or publishing establishment; xx) retail outlet or large scale retail; xxi) recreational establishment; xxii) recreational vehicles sales and service establishment; xxiii) telecommunication broadcasting or transmission establishment; xxiv) research and development establishments; xxv) restaurant; xxvi) service and repair establishment; xxvii) transportation depot; xxviii) warehouses; xxix) warehouse, mini or self-storage facility.

Figure 4 indicates the 20 m and 70 m distance setbacks recommended between Class I (light) and Class II (medium) industrial uses on the employment lands. The area of influence is 70 m and 300 m respectively.

5 Consideration of Worst-Case Industrial/Commercial Activities

Cursory calculations based on HGC Engineering's experience with the permitted uses indicate that the MECP daytime sound level limit of 50 dBA and nighttime limit of 45 dBA can be met at future residential lands to the west and at the existing residence to the east for typical Type I and II industrial uses such as logistics warehousing. There is potential for sound level excesses at neighbouring residential uses if there are significant outdoor trucking and storage yard activities or mechanical equipment. Noise control measures such as perimeter berms and/or localized noise barriers around noise sources may be required.

To minimize any potential noise impact, consideration should be given to the location of the loading areas, outdoor storage areas, trucking routes, repair bay doors, etc. to the east side of the buildings on Blocks 1 and 2 and on the west side of buildings for Block 6, so that the buildings may function as barriers themselves. Large-scale operations are not expected on Blocks 3, 4, 5 and 7 due to lot size. If significant outdoor activities are proposed on the employment areas, noise barriers may be required along the west boundary of Blocks 1 and 2 and eastern property boundary of Block 6 depending on the intensity of the operations, quantity and type of exterior mechanical equipment and numbers of







truck movements etc.

6 Discussion and Recommendations

The results of the investigation indicate that the proposed industrial development near existing and future residential lands is feasible on this site with respect to noise. The distance setbacks for Class I and II industries are met with respect to the future residential subdivision to the west. Preference for commercial and other business uses (light industrial uses) should be provided for the facilities along the west limit of the employment lands as mitigation for these types of uses are typically not as onerous as the allowable (as contained in the permitted uses list) industrial uses.

- 1. The zoning bylaw should include provisions which only permit the placement of Class I or II industrial uses subject to those industries demonstrating that their operations can be expected not to cause an adverse impact on the future residential lands through the preparation of technical Noise Studies once site plans and potential users are known. These may include factors relating to the location of loading bays and the location/restrictions on outdoor trucking activities or storage on lands for example.
- 2. Individual industries or commercial uses should be required to perform noise studies at the discretion of the Municipality relating to the impact of their proposed operations on the existing (proposed) residences. The goal of the noise studies would be to show compliance with the environmental noise criteria contained MECP Guideline NPC-300, or identify specific mitigation measures which can be implemented on the site plan or for specific pieces of equipment or activities at loading areas, for example, which will result in acceptable sound levels at the sensitive receptors to the east.
- 3. If Class III industries are proposed on the employment lands (e.g., large scale manufacturing), outdoor activities and trucking areas should be located on the shielded side of the building, away from the future residential uses to the west and existing residences to the east and subject to the completion of noise studies demonstrating that MECP Guideline NPC-300 limits can be met at neighbouring noise sensitive uses.







- 4. Individual industries may also be required to obtain Environmental Compliance Approvals from the MECP for their operations under the EPA, depending upon the possibility of adverse effects. This may include the preparation Acoustic Assessment reports and the implementation of physical mitigation measures in addition to the required minimum distance setbacks and perimeter barriers.
- 5. If the residential use adjacent to Blocks 5 and 6 is to remain, a minimum 20 m buffer zone is recommended on the industrial blocks along the joint property boundary or a noise study shall be completed to determine any noise control requirements to meet MECP guidelines to support a reduce setback. Portions of the industrial land can also be considered as some or all of the setback if the specific use of that portion of the industrial land is controlled in a site-specific zoning bylaw such as an employee parking area which is generally not considered a stationary noise source.





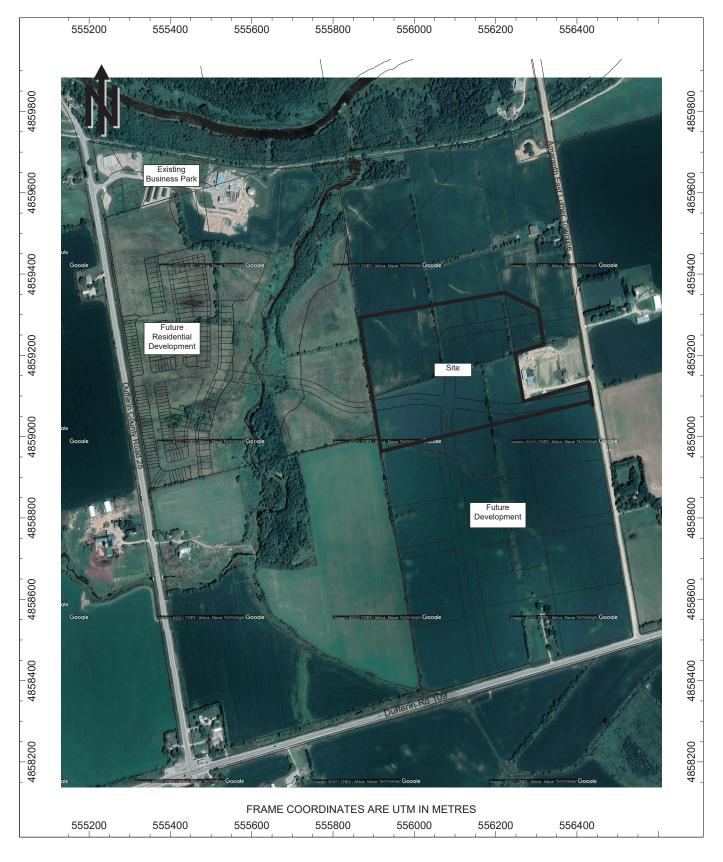


Figure 1: Aerial Photo







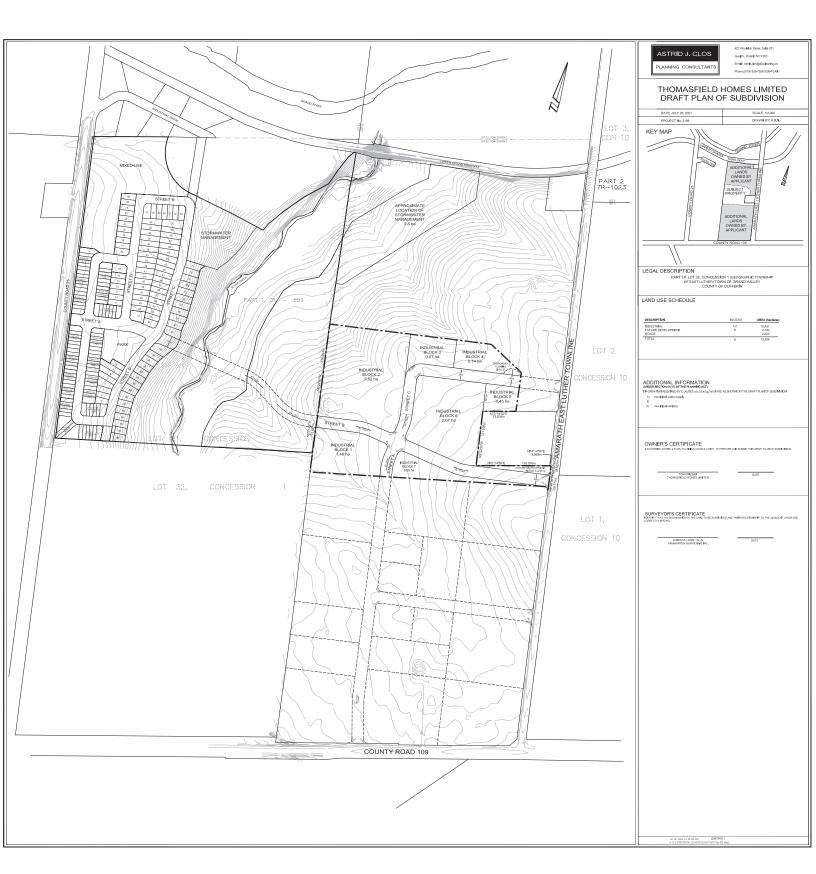


Figure 2: Draft Plan of Subdivision

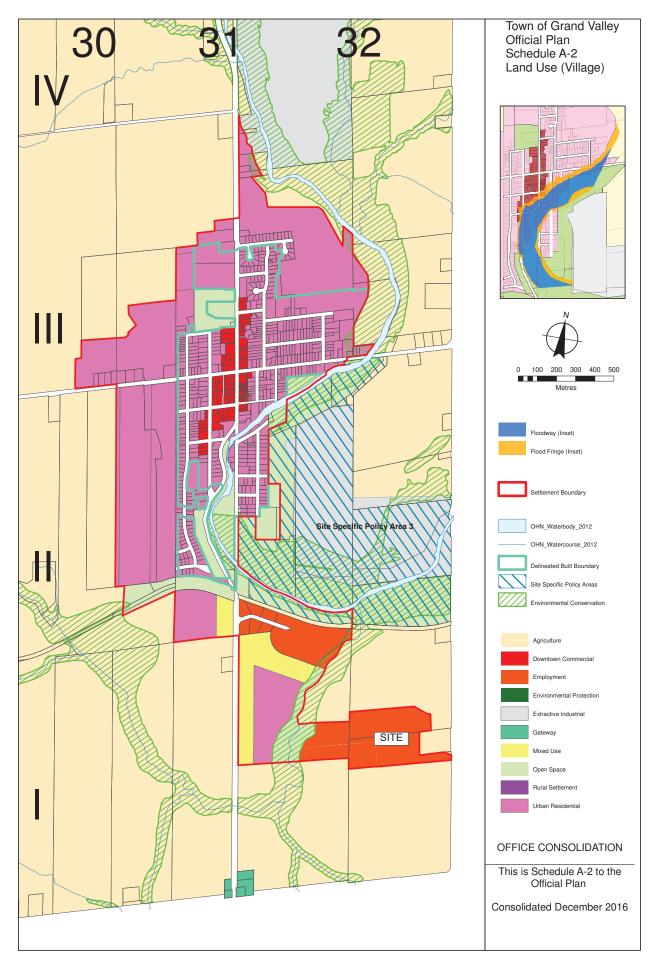


Figure 3: Schedule 'A2' of the Official Plan

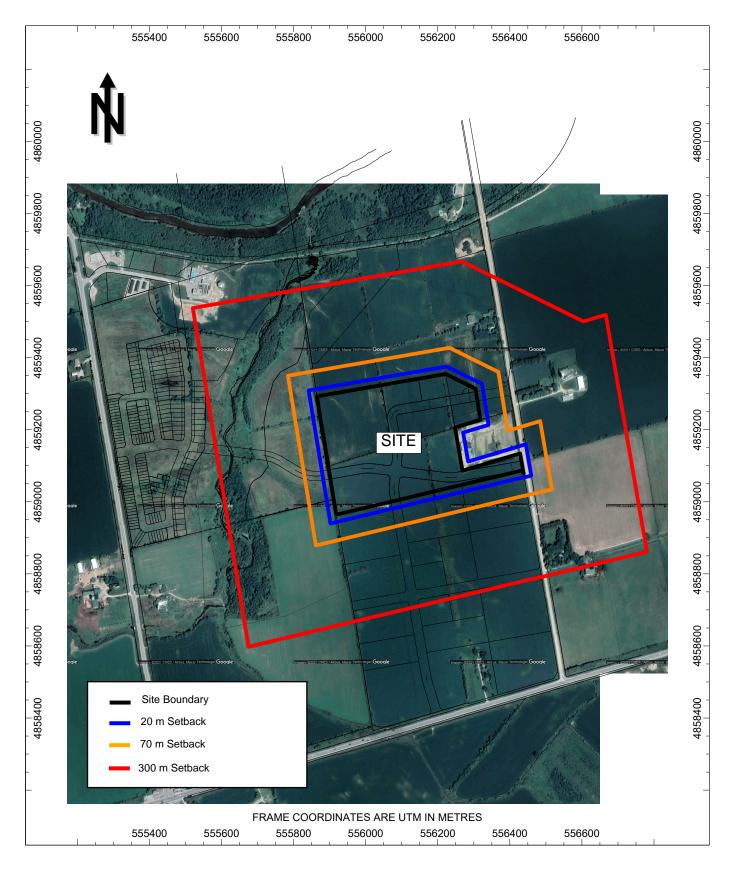


Figure 4: Area Plan Showing Approximate Location of Setbacks







APPENDIX A Additional Zoning and Official Plan Information







5.7 EMPLOYMENT

5.7.1 Identification

Employment Designations are used for larger scale industrial, commercial and institutional *development*. They have high exposure to traffic and are easily accessible. Council will endeavor to ensure there is an adequate supply of lands providing locations for a variety of appropriate employment uses to accommodate growth.

The Town will promote economic *development* and competitiveness by providing opportunities for a diversified economic base, including maintaining a range and choice of suitable sites for employment uses which support a wide range of economic activities and ancillary uses, and take into account the needs of existing and future businesses.

The following policies shall apply to those lands having an Employment Designation on Official Plan Schedule A-1.

5.7.2 Objectives

The objectives of the Employment Designation are:

- a) To encourage a broad range of employment generating land uses; including, but not limited to clusters of business and economic activities;
- b) To direct large-scale commercial, industrial and institutional uses to specific areas in the Town where those uses will benefit from roadway exposure and be compatible with adjacent land uses; and,
- c) To provide *development* criteria to minimize potential land use conflicts and ensure an attractive and functional area for employment.

5.7.3 Permitted Uses

Lands in the Employment Designation may be used for the following:

- a) manufacturing, processing, repair, servicing and recycling;
- b) warehousing and enclosed storage of goods and raw materials;
- c) transportation terminals and truck terminals;
- vehicle, machinery and equipment sales, service and leasing operations, fuel retailing operations, automotive commercial uses, such as service stations, mechanical and body repair, recreational vehicle or trailer sales and service, car rental outlet;
- e) offices complex, larger-scaled office building

- f) warehousing and retail outlets, including building materials outlets, gardening and nursery centres;
- g) hotels and motels;
- h) large scale institutional, commercial and recreational uses and
- i) outside storage associated with a permitted use.

5.7.4 Prohibited Uses

Except where specifically permitted by this Plan, the following uses are prohibited:

- a) scrap, salvage or wrecking yards or facilities;
- b) the manufacture of asphalt and petroleum refinery operations;
- c) the extraction or storage of potentially hazardous materials;
- d) the extraction or storage of mineral aggregate resources; and
- e) noxious uses.

5.7.5 **Development Policies**

In addition to the *Development* Criteria in Section 4, the following policies shall apply:

- a) Generally,new *development* within the Employment Designation shall be on *municipal water and wastewater systems*.
- b) Industrial uses such as truck and transportation terminals having significant transportation requirements shall be encouraged to locate adjacent to arterial or collector roads and not include the main street or roads within the village for their general routes.
- c) Outside storage shall be permitted in the Employment Designation only where it is well removed from view and adequately buffered. Such open storage shall be screened from view by fences, buildings, and/or landscaping.
- d) Single offices and small scale hotels and motels are encouraged to located in the Downtown Commercial core and mixed use designations.
- e) Commercial uses should be grouped in compact areas and developed with shared access and parking among various *developments*.
- f) All Employment uses shall minimize noise, visual, traffic, pollution and other related nuisances and hazards. Industrial uses that are in proximity to non-

industrial uses shall be adequately setback and provide appropriate screening or buffering to the satisfaction of the Town, to minimize any potential negative impacts that the *development* may have on non-industrial uses.

- g) All *development* will be regulated by Site Plan Control.
- h) Any application to redesignate lands in the Employment Designation to permit non-employment uses will only be considered through a municipal comprehensive *review* where it has been demonstrated that:
 - i. There is a need for the conversion:
 - ii. The municipality will meet the employment forecasts;
 - The conversion will not adversely affect the overall viability of the employment designation and achievement of the intensification and Density Targets;
 - iv. There is existing or planned infrastructure to accommodate the proposed conversion;
 - v. The lands are not required over the long term for the employment purposes for which they are designated; and
 - vi. Cross-jurisdictional issues have been considered.

5.7.6 Severance Policies

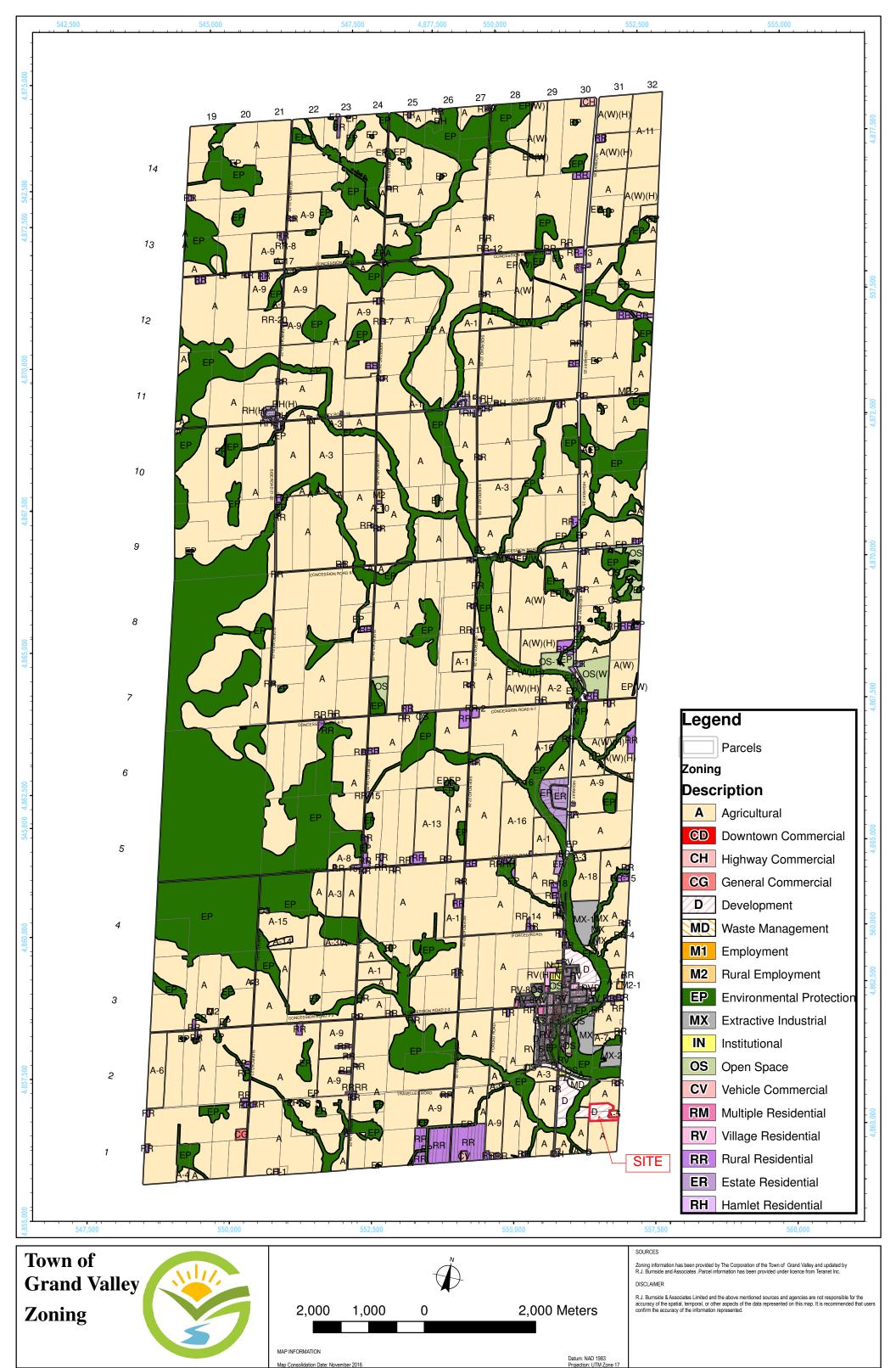
New lots shall be of a sufficient size to accommodate on-site storm water management, parking, loading, and buffering from adjacent uses. Lots will not be permitted for existing or new residential uses.

New lots should not be created without consideration for area-wide storm water and transportation impacts of the *development*.

Where the proposed *development* requires the extension of municipal roads or other services, a Plan of Subdivision shall be required. Subsequent *development* by part lot control or consent will be considered only where servicing and land use compatibility issues can be addressed.

5.7.7 Zoning

The Zoning By-law shall provide for a range of uses within the Employment Lands designation. The Zoning By-law shall contain provisions including adequate setbacks from specific land uses, parking and loading requirements, landscaped area or buffering requirements, prohibition of nuisances, and regulations for outside storage.



4.9 EMPLOYMENT (M1) ZONE

No person within any Employment (M1) Zone, shall use any land or erect, alter or use any building or structure except in accordance with the following:

- 4.9.1 Permitted Usesi) agricultural implement sales outlet;
- ii) agricultural produce storage area or facility;
- iii) building supply and lumber establishment;
- iv) bulk fuel depot;
- v) business, professional or administrative office;
- vi) computer, electronic or data processing;
- vii) contractors or tradesman establishment:
- viii) entertainment establishment:
- ix) equipment sales and rental establishment;
- x) feed mill;
- xi) financial institution;
- xii) letter carrier depot;
- xiii) manufacturing, processing, packaging, fabricating and assembly plant;
- xiv) motor vehicle repair garage;
- xv) motor vehicle parts establishment;
- xvi) motor vehicle body shop;
- xvii) outdoor storage, accessory;
- xviii) parking garage, structure or lot;
- xix) printing or publishing establishment;
- xx) retail outlet or large scale retail;
- xxi) recreational establishment;
- xxii) recreational vehicles sales and service establishment;
- xxiii) telecommunication broadcasting or transmission establishment;
- xxiv) research and development establishments;
- xxv) restaurant;
- xxvi) service and repair establishment;
- xxvii) transportation depot;
- xxviii) warehouses;
- xxix) warehouse, mini or self-storage facility.

4.9.2 Regulations for Permitted Uses i) Minimum lot area

i)	Minimum lot area	0.25 ha (.61 acres)
ii)	Minimum lot frontage	30 m (98 ft)
iii)	Minimum front yard	7.5 m (24 ft)
iv)	Minimum interior side yard	4.5 m (14.7 ft)
v)	Minimum exterior side yard	7.5 m (24.6 ft)
vi)	Minimum rear yard	7.5 m
vii)	Maximum lot coverage	50%
viii)	Maximum height	12 m (39 ft)
ix)	Minimum landscaped open space strip	3 m (9.8ft)
	abutting any front lot line and exterior lot line	
x)	Minimum landscaped open space strip abutting	10 m (32.8)

4.9.3 Exceptions

any residential or institutional zone or use

"4.9.3.1 Employment Exception One (M1-1) Zone (Part Lot 31, Concession 2, Part 1 of Lot 6, Registered Plan No. 130, Industrial Drive)

Notwithstanding the permitted uses of section 4.9.1 of the Employment (M1) Zone, to the contrary, on lands zoned Employment Exception One (M1-1) the only uses permitted shall be warehouses and/or mini or self-storage facility and accessory uses. In all other respects, the provisions of this by-law shall apply.